

# PATENT COOPERATION TREATY

## PCT

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### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

28 JUN 2005

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>35298-PCT</b>	<b>FOR FURTHER ACTION</b>		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. <b>PCT/US03/31264</b>	International filing date (day/month/year) <b>01 October 2003 (01.10.2003)</b>	Priority date (day/month/year) <b>01 October 2002 (01.10.2002)</b>	
International Patent Classification (IPC) or national classification and IPC <b>IPC(7): B32B 12/00; B29C 67/20 and US Cl.: 428/365, 372, 392, 394, 395, 397, 421, 500; 264/127, 176.1</b>			
Applicant <b>SHAMROCK TECHNOLOGIES, INC</b>			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>3</u> sheets.</p> <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>			
Date of submission of the demand <b>21 April 2004 (21.04.2004)</b>		Date of completion of this report <b>12 October 2004 (12.10.2004)</b>	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer  Ling X. Xu <span style="float: right;">Jean Proctor Paralegal Specialist</span> Telephone No. 571-272-1700	

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/31264

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed.
- ☒ the description:  
pages 1-28 as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_.
- ☒ the claims:  
pages NONE, as originally filed  
pages NONE, as amended (together with any statement) under Article 19  
pages NONE, filed with the demand  
pages 29-31, filed with the letter of 23 September 2004.
- ☒ the drawings:  
pages 1/3-3/3, as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_.
- ☐ the sequence listing part of the description:  
pages NONE, as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_.

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/US03/31264**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>NONE</u>	YES
	Claims <u>1-20</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-20</u>	NO
Industrial Applicability (IA)	Claims <u>1-20</u>	YES
	Claims <u>NONE</u>	NO

**2. CITATIONS AND EXPLANATIONS**

Claims 1-20 lack novelty under PCT Article 33(2) as being anticipated by Kawai et al. (US 5,286,324).

Kawai discloses a synthetic fiber made of PTFE resin material (col. 1, lines 50-67 and col. 5, lines 20-25) which is used in the form of an aqueous dispersion or an organic solvent dispersion. The dispersion contains PTFE resin particles of a particle size not greater than 1  $\mu$ m (col. 3, lines 50-67). The dispersion also comprises polyester or polyolefin (col. 4, lines 1-67). The dispersion is subjected to a film forming process which is executed by extrusion (col. 5, lines 1-20). The PTFE resin concentration in the film forming mixture ranges between 1-50 wt % (col. 5, lines 1-10). Kawai also discloses that a film formable mixture is extruded together with a core of a non-coagulative or coagulative fluid from a spinneret for spinning a hollow fiber into a coagulating liquid directly or indirectly through the air so as to coagulate the formable mixture (col. 5, lines 20-60).

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in the fiber industry.

----- NEW CITATIONS -----

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## REPLACEMENT PAGE

CLAIMS:

1. A method for making enhancing the properties of a fiber made from a synthetic material, comprising:

preparing a melt of the synthetic material;

adding polytetrafluoroethylene (PTFE) material in to the melt;

extruding the melt having the added PTFE material through a spinneret to form the fiber composed mostly of the synthetic material, wherein the synthetic material is non-PTFE material.

2. The method of claim 1, wherein adding the PTFE material into the melt comprises dispersing PTFE particles having a size less than about one micron into the melt.

3. The method of claim 1, wherein adding the PTFE material into the melt comprises adding PTFE powder that is dispersible to submicron particle size.

4. The method of claim 1, wherein adding the PTFE material into the melt comprises adding an aqueous dispersion of PTFE powder that is dispersible to low micron particle size.

5. The method of claim 1, wherein adding the PTFE material into the melt comprises adding an organic solvent dispersion of PTFE powder that is dispersible to low micron particle size.

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## REPLACEMENT PAGE

6. The method of claim 5 wherein the organic solvent dispersion of PTFE powder comprises about 20% to about 60% PTFE by weight.
7. The method of claim 1, wherein adding the PTFE material into the melt comprises dispersing PTFE particle that have a size smaller than a channel size of the spinneret.
8. The method of claim 1, wherein adding the PTFE material into the melt comprises introducing dispersible PTFE powder in the form of a pelletized master batch.
9. The method of claim 8, wherein the master batch comprises about 5% PTFE to about 60% PTFE.
10. The method of claim 1, wherein the fiber is a bi-component fiber, and wherein extruding the melt having the added PTFE material comprises forming a component of the bi-component fiber.
11. The method of claim 1, wherein the synthetic material comprises a material selected from the group of polyester, nylon, polypropylene, polyethylene terephthalate, a thermoplastic resin and any combination thereof.
12. A fabric comprising fibers made by the method of claim 1.
13. A synthetic fiber comprising:

mostly of an extrusion of material selected from the group of polyester, nylon, polypropylene, polyethylene terephthalate, a thermoplastic resin and any combination thereof; and

a dispersion of PTFE particles in the extrusion, wherein the PTFE particles form a small fraction of the material of the synthetic fiber.

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## REPLACEMENT PAGE

14. The synthetic fiber of claim 13 wherein the dispersion of PTFE particles comprises PTFE particles having a size less than about one micron.
15. The synthetic fiber of claim 13 wherein the dispersion of PTFE particles comprises PTFE particles having a size less than about one micron.
16. The synthetic fiber of claim 13 wherein the dispersion of PTFE particles is substantially uniformly distributed in the extrusion.
17. A fabric comprising the synthetic fiber of claim 13.
18. A textile comprising the synthetic fiber of claim 13.
19. A carpet comprising the fiber of claim 13.
20. An article of manufacture comprising the fiber of claim 13.